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Radiological Survey Results - Release to  
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IF YES, ENTER TPA NO.

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The results of the radiological survey for Region II (Building 163, Box Shop) of the SRE are described. All survey results are below the applicable limits, indicating that this area may be released to unrestricted use.

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# CONTENTS

	<u>Page</u>
I. INTRODUCTION .....	3
II. SURVEYS AND RESULTS .....	5
A. Removable Contamination .....	5
B. Surface Radiation .....	5
C. Soil Samples .....	6
D. Concrete Samples .....	6
E. Water Samples .....	6
III. CONCLUSIONS .....	7

## I. INTRODUCTION

This report covers SRE Region II located along the main entrance way to the reactor complex (Figure 1). Building 163 is located in this area and will be divided between two reports. The west end of the building is used as a contaminated equipment work area. Final release of this part of the building is forecast near the end of the D&D Program at the SRE. The remaining half of the building (east end) is currently used to make wooden shipping containers. Throughout the history of this part of the building, it has been used for nonnuclear support work such as a pipe shop and a machine shop. Routine surveys performed as part of the reactor operations program have never indicated any significant contamination of this part.

If a decision is made to remove the present wall between the two parts of the building, this report must be considered a conditional release, due to the hazard of cross contamination by such an operation.

## II. SURVEYS AND RESULTS

### A. REMOVABLE CONTAMINATION

One hundred smear swipes using Whatman 540 papers were taken throughout the east end of Building 163. Particular attention was made for any place where contamination might have migrated from the contaminated side of the building. Each swipe covered an area of  $100 \text{ cm}^2$ . Results for all smears were reported as less than 30 disintegrations per minute. However, no activity was detected that exceeded the normal statistical deviation above background.

All smears for this report were counted on an automatic counting system equipped with a thin window gas proportional detector. This system has a counting efficiency of about 36% for Bi-210 activity. A normal background count is approximately 20 counts per minute. Since the system is used in the beta-gamma mode above the alpha plateau, any alpha emitters present would also be detected. The normal efficiency for alpha activity is between 20 and 25%.

This area was not subject to contamination by alpha-emitting radionuclides. Therefore, the applicable limit for removable contamination is  $100 \text{ dpm}/100 \text{ cm}^2$  for beta-gamma emitters. All smears were below this limit.

### B. SURFACE RADIATION

Two survey instruments were used for this part of the survey; a Technical Associates Model CP-7 ion chamber detector and a PUG-1/P-11A probe thin window pancake G-M detector. This latter instrument was needed for its faster response and audible output indication.

Using both instruments held about 2-1/2 ft above ground level, a complete walk-through inspection was made of all accessible areas. An average reading of 0.06 mrad/hr ( $\pm 0.05$ ) was recorded outside Building 163 with the Model CP-7. Some of this reading may be attributed to higher than normal background caused by surrounding nuclear facilities. All readings with the CP-7 were below the limit of 0.1 mrad/hr.

#### C. SOIL SAMPLES

All of the area in this region outside Building 163 is covered with asphalt paving. Soil samples are not applicable for this region.

#### D. CONCRETE SAMPLES

There are several concrete abutments around manhole accesses and curbs. They are located well away from any source of contamination or activation and are not to be removed. Concrete samples are not applicable for this region.

#### E. WATER SAMPLES

There are no natural or man-made catch basins or reservoirs for water in this region. Water samples are not applicable for this region.

### III. CONCLUSIONS

In each type of test performed, all samples indicated levels less than those limits prescribed by the Decontamination and Disposition of Facilities Program for release to unrestricted use.

All appropriate surveys indicate that current existing radioactivity in the area is below the applicable limits for release to unrestricted use.